

Extraction from our pricelist:



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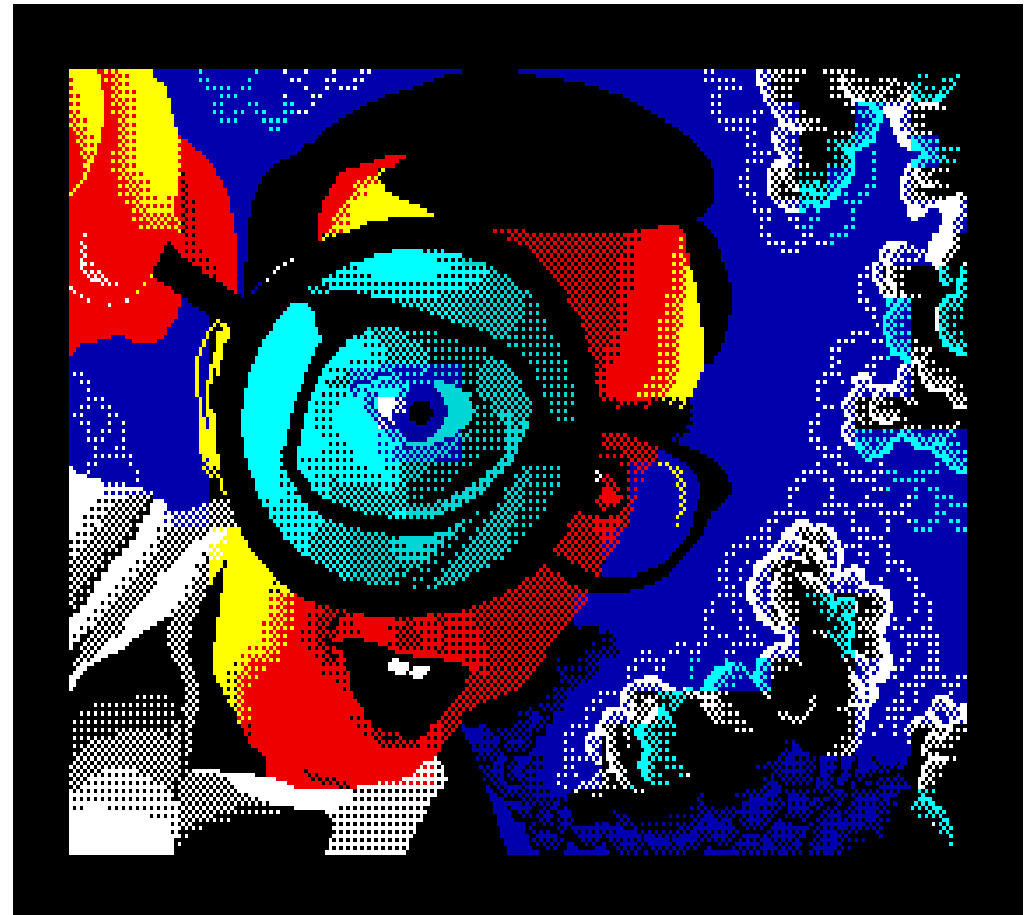
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SUC-SESSION

DAS SPECTRUM - MAGAZIN

Issue 202 March 2005



Picture: Magnify by Gas 13

WE FOUND IT: THE NEW SUC-SESSION

Contents

<i>Contents/Publisher/Prices</i>	2	<i>Constructors needed</i>	16
<i>Editorial</i>	3	<i>Classic Computing</i>	17
<i>The lost 200</i>	4	<i>Games review</i>	18
<i>Readers letters</i>	5	<i>Tips & Tricks</i>	20
<i>News in Brief</i>	11	<i>Events calendar</i>	26
<i>ORSAM 2004</i>	14	<i>Wanted</i>	26
<i>Spectrology in Wittenberg 15</i>		<i>SINTECH Advertisement</i>	28

Publisher

The Spectrum-User-Club, formally known as the Spectrum-User-Club Wuppertal, is the oldest existing Spectrum-Club in Germany, the ASC is the only Spectrum-Club in Austria. Since 1998 the Club-Magazine SUC-SESSION and SCENE+ have been sent together to all club members. They are compiled from contributions produced by the editor(s) as well as the readers. We call on all readers to send in their contributions as text files on cassette, +D, Opus, MB02 or MS-DOS (Word or pure Text files) or handwritten, per e-mail or printed on paper to us.

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How can you become a

Membership is basically free but the main services, the clubs magazine SUC-SESSION and SCENE+ can be subscribed to individually or together.

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New members who are ordering the Diskette version of SCENE+ should state the required format, we have available MB02+, Opus, +D und now also D80/Didaktik. If you are ordering additional Disk's or Cassettes together with a Combi-Packet then the price for these must be added to the Subscription number. Any questions should simply contact us per E-mail or under: 0049-711-775033.

```

9030 IF s$(k)=" " THEN PRINT AT zeile+
1,spalte+k-1; PAPER p; INK i; BRIGHT b
r;" ": PRINT AT zeile,spalte+k-1; PAPE
R p; INK i; BRIGHT br;" ": GO TO 9090
9040 LET x=8*CODE s$(k)+15360
9050 FOR z=0 TO 7
9060 POKE c+2*z,PEEK (x+z): POKE c+2*z
+1,PEEK (x+z+1)
9070 NEXT z
9080 PRINT AT zeile,spalte+k-1; PAPER
p; INK i; BRIGHT br;"ö": PRINT AT zeil
e+1,spalte+k-1; PAPER p; INK i; BRIGHT
br;"÷"
9090 NEXT k
9095 RETURN
9100 REM UP Umlaute
9105 FOR x=1 TO 7
9110 READ a$
9115 FOR n=0 TO 7
9120 READ y
9125 POKE USR a$+n,y
9130 NEXT n
9135 DATA "s",36,0,56,4,60,68,60,0
9140 DATA "d",68,0,68,68,68,68,56,0
9145 DATA "f",68,0,56,68,68,68,56,0
9150 DATA "g",66,60,66,66,126,66,66,0
9155 DATA "h",24,82,90,66,66,66,60,0
9160 DATA "j",66,60,66,66,66,66,60,0
9165 DATA "k",0,48,72,88,68,68,120,64
9170 NEXT x
9190 RETURN
9200 REM UP Balken
9205 PRINT AT zeile+hoehe,spalte; PAPE
R p; INK i; BRIGHT br;"ä"
9210 FOR k=1 TO LEN s$-1
9220 PRINT AT zeile+hoehe,spalte+k; PA
PER p; INK i; BRIGHT br;"ä"
9230 NEXT k
9240 PRINT AT zeile+hoehe,spalte+LEN s
$; PAPER p; INK i; BRIGHT br;"ä"
9250 PRINT AT zeile,spalte+LEN s$; PAP
ER p; INK i; BRIGHT br;"é"
9260 IF hoehe<2 THEN GO TO 9290
9270 FOR k=1 TO hoehe-1
9280 PRINT AT zeile+k,spalte+LEN s$; P
APER p; INK i; BRIGHT br;"é"
9285 NEXT k
9290 RETURN
9300 REM UP Initialisierung
9303 DIM f(10)
9305 DIM v(11)
9306 DIM n(11)
9307 DIM h(11)
9308 DIM z(11)
9309 DIM o(3)
9310 DIM a$(10,10)
9320 LET a$(1)=" äè "
9330 LET a$(2)=" ì "

```

```

9340 LET a$(3)=" àìè "
9350 LET a$(4)=" ììì "
9360 LET a$(5)=" àìììè "
9370 LET a$(6)=" ìììì "
9380 LET a$(7)=" àììììè "
9390 LET a$(8)=" ììììì "
9400 LET a$(9)="àìììììè"
9410 LET a$(10)="ììììììì"
9500 FOR i=1 TO 5
9505 LET f(i)=i: LET f(i+5)=i
9510 PRINT AT 13+i,0; INK f(i);a$(i)
9520 NEXT i
9600 RETURN
9700 REM UP HANOI
9710 LET ti=ti+1
9720 LET z(ti)=zahl: LET v(ti)=h1: LET
h(ti)=h3: LET n(ti)=h2
9730 IF z(ti)=0 THEN LET ti=ti-1: RETU
RN
9740 LET zahl=z(ti)-1: LET hi=v(ti): L
ET h3=n(ti): LET h2=h(ti)
9750 GO SUB 9710
9752 LET zug=zug+1
9753 PRINT AT 0,0; INK 0;"Zug: ";zug
9755 PRINT AT 20-o(v(ti)),(v(ti)-1)*10
; BRIGHT 0;" ": LET o(v(ti))=
o(v(ti))-1
9760 PRINT AT 19-o(n(ti)),(n(ti)-1)*10
; INK f(z(ti));a$(z(ti)): LET o(n(ti))
=o(n(ti))+1
9765 IF i$="j" OR i$="J" THEN INPUT "B
itte Taste drücken!";t$
9770 LET zahl=z(ti)-1: LET h1=h(ti): L
ET h3=v(ti): LET h2=n(ti)
9780 GO SUB 9710
9790 LET ti=ti-1: RETURN

```

LOGO and PASCAL, but even BASIC allows us to create a recursive algorithm as we have seen. In BASIC this uses the RETURN stack. For FORTRAN this is not possible and it would be necessary to simulate this stack.

Programm-Listing:

```

10 REM *****
20 REM * Spielestrategien *
30 REM *****
40 REM Tuerme von Hanoi
45 REM 2003 Wilko Schroeter
50 GO SUB 9100
55 INK 0: PAPER 7: BRIGHT 0
60 CLS
65 GO SUB 9300
70 INK 1
100 LET s$="Strategien ZX Spectrum"
105 LET zeile=2: LET i=7: LET p=1:
LET br=1
110 GO SUB 9000
120 LET s$="_____ "
125 LET zeile=4
130 GO SUB 9000
150 LET zeile=2: LET hoehe=4: LET p=7
: LET i=1: LET br=0
160 GO SUB 9200
190 LET s$="2003 Wilko Schrüter, Rost
ock"
200 LET zeile=8: LET hoehe=1: LET p=4
: LET i=0: LET br=1
205 LET y1=32-LEN (s$): LET spalte=IN
T (y1/2)
207 PRINT AT zeile,spalte: PAPER p; I
NK i: BRIGHT br;s$
208 LET p=7: LET i=4: LET br=0
210 GO SUB 9200
220 LET zeile=11: LET hoehe=2: LET i=
1: LET p=2: LET br=1
230 LET s$="Thema: Hanoi-Algorithmus"
250 GO SUB 9000
260 LET i=2: LET p=7: LET br=0
270 GO SUB 9200
300 PRINT AT 20,0: INK 0: PAPER 7:
BRIGHT 0;"Bitte Taste drücken!"
310 PAUSE 0
320 CLS
340 REM Hauptprogramm
350 LET s$="Türme von Hanoi"
360 LET zeile=0: LET hoehe=1: LET p=4
: LET i=0: LET br=1: LET zug=0
370 LET y1=32-LEN (s$): LET spalte=IN
T (y1/2)
380 PRINT AT zeile,spalte: PAPER p; I
NK i: BRIGHT br;s$
390 LET p=7: LET i=4: LET br=0
400 GO SUB 9200

```

```

405 INK 0
410 PRINT AT 2,0: PAPER 7: BRIGHT 0;"
Dieses Programm demonstriert dieOptima
lstrategie zur Lösung des Problems."
420 PRINT AT 6,0: PAPER 7: BRIGHT 0;"
Mit wieviel Scheiben soll der Algori
thmus gezeigt werden?": PRINT "(maxima
l 10)"
430 INPUT zahl
433 IF zahl<1 OR zahl>10 THEN PRINT "
Die Zahl ist nicht gültig!": GO TO 430
440 PRINT AT 10,0: PAPER 7: BRIGHT 0
;"In Ordnung. Ich werde jetzt ": PRINT
zahl;" Scheiben umstapeln."
445 PRINT AT 13,0;"Manuelle Demonstra
tion?": PRINT "(J/N)"
450 INPUT i$
451 LET h1=1: LET h2=3: LET h3=2: LET
ti=0: LET o(1)=zahl: LET o(2)=0: LET
o(3)=0
452 CLS
453 FOR i=1 TO zahl
455 PRINT AT 20-i,0: INK f(zahl-i+1);
a$(zahl-i+1)
456 NEXT i
457 INK 0: PRINT AT 21,4;"1";AT 21,14
;"2";AT 21,24;"3"
458 LET az=(65536*PEEK 23674+256*PEEK
23673+PEEK 23672)/50
460 GO SUB 9700
515 LET ez=(65536*PEEK 23674+256*PEEK
23673+PEEK 23672)/50
581 INK 0
590 PRINT AT 0,0;"Die Scheiben sind j
etzt": PRINT "umgestapelt."
595 PRINT : PRINT "Dazu waren ";zug;"
Züge notwendig."
600 PRINT : PRINT "Für die Berechnung
brauchte ich "ez-az;" Sekunden."
610 PRINT : PRINT INK 0;"Noch ein Ver
such? (J/N)"
620 INPUT i$
630 IF i$="j" OR i$="J" THEN
GO TO 320
8999 STOP
9000 REM UP Gross-Schrift
9005 LET y1=32-LEN (s$): LET spalte=IN
T (y1/2)
9010 LET c=USR "a"
9020 FOR k=1 TO LEN s$

```

EDITORIAL

Dear Spectrum-Friends,

so, do any of you remember what it's like to hold a club magazine in your hand. Issue 201 came out in August/September.... and that was the last up until this issue. As I said I was very busy as my exams came nearer and nearer and of course it became more and more stressful. But not only that I also had a lot to do with my business, the Christmas rush began in September.

I simply haven't been able to write for the SUC-Session any earlier and even as I write this I don't know when I will have the time to put the whole magazine together. I would like the magazine to arrive regularly and punctually but it simply isn't possible any more and this won't change for a long time. Even though my exams are now finished and my educational phase has come to an end. My business has simply become bigger and I can't employ people to reduce the load and then simply invest this free time in the SUC. In order to guarantee a regular appearance of the magazine we therefore need to restructure. At the moment I am responsible for the Membership register, write most of the text, edit the magazine, pack and post each issue. Plus putting it onto the server as a PDF file. Each of these activities could just as easily be performed by someone else. I'm still prepared to be responsible for some of these activities but I can't manage them all, anymore.

The question that needs to be answered before the next and last issue (at least from me), is how we will proceed. I'm hoping here for your energetic involvement, so that it's not the end of the magazine, and like SCENE+ which although it doesn't appear so often, isn't dead.

What disturbs me a little is the fact that there will be readers who will not read these words for a number of months, because the SUC-Session isn't read as intensively as it used to be. In this case the chance that we will find enough people to form a new team for the SUC-Session and therewith the Spectrum, is smaller. But I still hope it will work. Please don't hide behind others. Everyone who at least has an internet connection can help. This doesn't only apply to those living around Stuttgart, I'm asking every Spectrum user. Finally we are a club and not a commercial magazine and so everyone can help. Anyone can send a CD to the copy-shop just as well as I can and allow the magazine to be produced and after that put them into envelopes. You don't need any specialised knowledge but it would reduce the load on me.

I await your reaction with baited breath, show me that the Spectrum is not dead.

Your

Thomas

Readers Letters

Despite the long delay between issues there haven't been many letters. Astonishing is that few readers have asked where the next issue is. Didn't anyone miss their SUC-Session?

Here then the first letter from August last year:

Hello Thomas, have I missed something ? Last Friday I was by Wolfgang in Cologne and he already has the new Info. Today it's the 24.8.04 and here the new Info still hasn't arrived. Though to my shame I must admit that I didn't check whether I had actually paid on time.

Please be so kind as to check for me. That last Info I received was issue 199 and the +D diskette 59. Thanks for your trouble and greetings from the Eifel.

Lothar

Hello Lothan, don't worry the post is simply stupid: During posting the stamps came off a large number of envelopes (it's only plastic). So I had glued the stamps onto the address label but as I said they are simply... halt, enough said. Yes for this reason I have to send a number again. Fortunately we don't have to pay again.

Hello Mr Eberle –

I have a quick question to the offer on your website: I have discovered that the flat cable to the keyboard on my Spectrum (48K) is defect and I need a new one. Do I need the 48K Membrane/Keyboard folia that you offer? And if yes, do you have a usable reference on how to install it? Best wishes, Robert Hirschfeld

Hello Mr Hirschfeld, the keyboard folia is exactly the one you need when your Spectrum is one of those with the rubber keyboard.

The folia is placed under the rubber mat. To do this you first have to remove the Metal plate and with that there are two versions:

- The metal plate is held in position by little flanges, in this case simply open the case and bend the flanges.
- Or the metal plate (as is most often the case) has been glued. In this case warm the metal plate with a hair dryer and very carefully separate it, without bending it.

After this the exchange of the folia is no problem.

Christopf Odenthal has an interesting offer for all Speccy fans:

Does the SUC has an EPROM burning service? I have bought an EPROM programmer and could be persuaded to offer a service providing the costs were covered (that is if I don't get swamped with requests, as I don't have so much free time). I could possibly burn EPROMs or read them out, though of course there is the copyright issue and people should sign to say that they are the owners of the data being programmed or read.

The discs are numbered 1,2,3...n-1,n in order of size. So we want to move a tower containing 4 discs from position 1 to position 3, so that the bottom disc at position 3 is disc 4. The move disc 4 to position 3 can only be carried out when the other discs 1,2 and 3 have been moved to position 2 (the staging place). So the problem is reduced to moving 3 of the discs from position 1 to position 2, the move disc 4 to position 3 and the transport of the rest of the tower from position 2 to position 3 to place them on disc 4. The recursion reduces the movement of k discs, to the movement of k-1 disks and the simple move of disk k to position 3 (k=1,2,...,n). It's important that the computer follows the recursion formula exactly and without making any mistakes, this is where most normal people would fail. To do it in practice here is a description of a BASIC subroutine shown in picture 2:

```

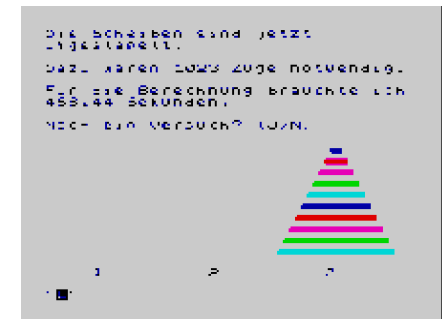
9700 REM UP HANOI
9710 LET ti=ti+1

9720 LET z(ti)=zahl: LET v(ti)=h1: LET h(ti)=
h3: LET n(ti)=h2
9730 IF z(ti)=0 THEN LET ti =ti-
1: RETURN
9740 LET zahl=z(ti)-1: LET hi=v(ti): LET h3
=n(ti): LET h2 = h(ti)
9750 GO SUB 9710
9752 LET zug=zug+1
9753 PRINT AT 0,0; INK 0;"Move: ";zug
9755 PRINT AT 20-o(v(ti)),v(ti)-
1)*10; BRIGHT 0;"   ": LET o(v(ti))=o(v(ti))-
1
9760 PRINT AT 19-o(n(ti)),n(ti)-
1)*10; INK f(z(ti));a$(z(ti)): LET o(n(ti))
=o(n(ti))+1
9765
IF i$="j" OR i$="J" THEN INPUT "Press any
key";i$
9770 LET zahl=z(ti)-
1: LET h1=h(ti): LET h3=v(ti): LET h2=n(ti)
9780 GO SUB 9710
9790 LET ti=ti-1: RETURN

```

Picture 2: The recursive algorithm

The program can also be used with n=10. The calculation time for the Spectrum will though then be about 4min and 49seconds (see picture 3)



Picture 3: The result for n = 10 discs

I would once again like to say that this solution programmed in BASIC uses a 100% complete strategy for the recursive solution of the problem.

And to finish let's look once again at the historical start to this puzzle from the legends of Indian-Vietnamese legend. For 64 discs 2 to the power of 64-1 moves would be needed. That's a decimal number with 20 positions. It's start is U=1.84 times 10 to the power of 19. If it takes exactly 1 second to move a single disc (the priests would have to be very quick),

then the whole process would take

years. Our cosmos

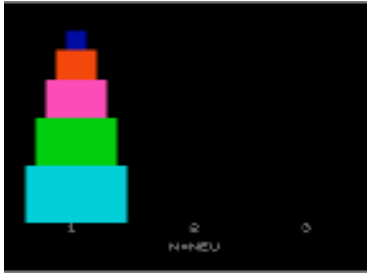
is to our knowledge not yet that old. In general it should be seen that with this example of recursion a first class tool for the solution of problems is made available. Especially with

Optimum Game Strategy

There are many strategy games for the ZX Spectrum especially in the area of Public Domain. This continuing series should show game strategies to produce an optimum solution.

Today: Towers of Hanoi

This well known game has a historical beginning which I would like to mention here in a short form. In the original version "Towers of Brahma" the priests of the temple in the Indian town of Benares had



the task to move a tower of 64 golden disks from one place to another whereby only one disk was to be carried at a time and it could be placed on a larger disc but not on a smaller one, there was also one single staging position available between the two locations. This task came out of the question "How long will the world exist"? to which the answer came "so long as you'll need to complete this task". So that's all of the rules and everyone will soon understand and solve the light-version with only 3 disks.



Bild 1: Optimale Zugfolge bei 3 Scheiben

For control purposes the number of the move is shown above the arrow in picture 1. So for 3 disks the minimum number of moves needed

is seven. So how many moves (minimum) are needed with 4 disks? Before this results in a lot of loud discussion and possible correction of first estimates, as I would suspect. I'd like to immediately provide the answer to this question. It can be done in 15 moves and in general the minimum number of moves is dependant on the number of discs n .

$$z = 2^n - 1 (n \in \mathbb{N}).$$

It can be quickly seen that with a larger number of discs, for example $n=10$ and therefore $z = 2^{10} - 1 = 1023$, it's necessary to have a strategy to solve this problem and to maintain a clear view of what you are doing. This strategy should be recursive and we can see it with a small number of discs, such as when $n=4$. For a quick understanding of the strategy

Pos. 1 is the start position,

Pos. 2 the staging position

Pos. 3 the final position (as in picture 1)

Great idea, I've used it immediately and Christof returned to me two perfect Spectrum-Roms (They have been released – no copyright problem). I'm happy to put anyone who asks in contact with Christof.

Klaus-Dieter Stübs has bought a 128K computer and has a number of plans:

Another question: who can permanently install a program for me in the Spectrum? Are there people who do it?

Hello Klaus-Dieter

A suitable solution for a permanent program in the Spectrum would be an EPROM for the Interface 2. There was a Spectrum EPROM service in England run by Kevin Guard. Unfortunately I can't find his address anymore and don't know if Kevin is still active. Perhaps someone will respond when I publish the question here in readers letters.

Christof has discovered the Spectrum +3e:

So what is a "+3e"? I only know the +2/+2a and the +3. Is the 'e' a version with a special user ROM with the bugs removed, or what? OK, I haven't ever spent much time looking at the +3's – they have 3 inch floppy and I don't think this ever found much favour amongst the speccy users. There were simply too many other formats.



Hello Christof, I've also not done much with the

+3. The "e" stands for "enhanced" and offers the addition of an IDE-Hard-disk interface including an extended ROM with diskette commands. It's a very simple possibility to use a hard-disk on the Spectrum. Via the 8 bit interface you are only using half the possibility of the hard-disk but it's more than enough for the Speccy. The interface is very simple and the ROM very good... Biggest disadvantage is in my opinion: It's still a +3 with all of it's disadvantages (Timing, 3" diskette, Busport...).

Mr. Casper is interested in an IDE-Interface

Perhaps you could include for me a packet of info's on the Spectrum IDE addition. With best wishes, KL-Peter Casper

Hello Mr. Casper, the IDE interface is only usable with the MB02 diskette interface. The problem is always the same that such an IDE interface need an operating system and fortunately the MB02 operating system also supports hard-disks (after a software modification, which is delivered with the interface). You don't have an MB02 and they are no longer available on the open market. Fortunately one of our members is committed to building a copy of this interface. If you are interested we will willingly pass on your details. More information about the MB02 can be found on our product pages of : <http://www.sintech-shop.de/home/spectrum-products.htm>

Achim is also interested in an IDE – Interface

Hello Thomas! I have a question about the complete IDE kit: What hardware is necessary? Which alternative controllers exist for the Spectrum 48K+. Do you have an OPUS available for sale at the moment? Price?

Lots of greetings, Achim Werner

Hello Achim, naturally you can read the answer given to the previous letter from Mr. Casper. The IDE kit that we sell is unfortunately only for the MB02. It would in theory work on any Spectrum but only the MB02 has the necessary operating system for it. There is an operating system called 'MATRIX' which runs on any Spectrum but it's only in a Beta version and for example has no save function. There is also no documentation for it.

There are a number of alternative interfaces but almost none of them has achieved popularity. We report regularly on them and to list all of the alternatives here would be too much.

We no longer have any OPUS's and I have pretty much cleared out my stock of defective OPUS's. There is simply no sense in it anymore, even if you have a working OPUS the question is for how long will it work. The opinion of an electronic expert is simply that the quality of the printed circuit board of the OPUS is not good enough and won't last more than 10 years and the OPUS is already twice as old as that.

So, to sell something like that doesn't make sense anymore. As always we have the brand new copies of the +D interface in our offer.

Ingo Truppel asks, how to unpack TAP-Files with the Tapmaster on the MB02

Hello Ingo, TAPMASTER is an MC Program. Before it is started the pointer must be set to the correct TAP file with the £ - command. The pointer always shows which program will be loaded next when the LOAD "" instruction is used. It is the equivalent of a position-counter on a cassette recorder. Now when you load the TAPMASTER normally, the pointer will be changed, so it has to be 'indirectly' loaded. This works with the # command. The best solution is to put the diskette with TAPMASTER in drive 2 and the diskette with the TAP files in drive 1. Then set the pointer for drive 1 and with NEW#2 "tapmaster" start the MC Program. A favourite combination instead of using drive 2 is to copy TAPMASTER to drive 9 (SRAM) and start it from there.

Claus-Peter will spend more time on his Spectrum after his retirement.

If you just happen to have a file for the HDT-ROM with a normal Save-Routine I would be more than happy to receive it via E-Mail. Hearty greetings from Dessau, Klaus-Peter Casper, post@casperonline.de

I hope someone has something on their computer and can send it quickly via E-Mail. We love it when we can bring two members into contact with each other in this way.

Hello Thomas,

As a long time 'but silent' member of the SUC I would like to wish you a healthy and successful year 2005. Unfortunately I have to tell you that because age and a lack free

goggles, drop headsquare, E, S, S, W, D (by the reception), give sack.

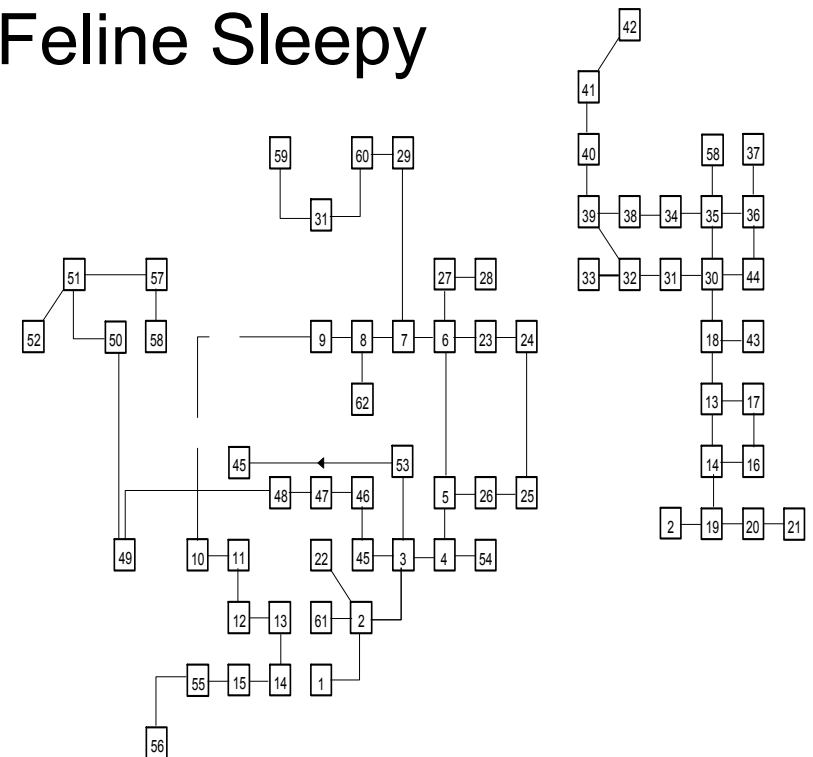
W (the hotel office), X board (we now have a blue key), E, E, N, N, N, N, W (where we left the holdall), take newspaper from holdall, E, S, S, S, S, W, U, E, N, N, W, W, X door (blue), unlock door, sit in chair (we read the paper we brought with us and discover everything was just a dream).

So that's what can happen. So be careful with your dreams, otherwise they may become real.

So that's it once again from our side. See you soon once again in the club info.

(c) 2003 by Harald R. Lack, Möslstraße 15 a, 83024 Rosenheim
Hubert Kracher, Schulweg 6, 83064 Großholzhausen

Feline Sleepy



poacher rowing down river), X shrub, SR stems (long stems), X stem (with leaves), remove leaves (from stem), take pin from holdall, take pliers from holdall, bend pin (we make a hook), drop pliers, take string from holdall, tie string to hook (for this we need the stem without leaves and we make a fishing rod), take roll from holdall, wet roll, make bait (you need to soak the roll), put bait on hook, fish river (not here), SW, fish river (we catch 8 trout), SR grass (we find a shopping net), take fish (we need the shopping net).

Drop rod, LOTH knothole (in fence), S, S, SE, E, E, S, give fish (the chef now leaves the kitchen and a new exit appears to the east), take grey key, E (the stock room of the chef), X shelves, LUND shelves (here is a walking stick), take stick, put stick in holdall, W, N, N, E (the herb garden – the chef is here), say hello (he returns to his kitchen – from now on we cannot go into the stock room or get the grey key – good that we have finished with it), S, W, S, S, S, S, W, U, W, N.

X door (grey), unlock door (we are in a very dusty room), listen (a sound is coming through the wooden wall panels), X mantelpiece (there are two lights), turn/twist candlestick (the wall panel opens), W (we are at the top of some steps – a grey striped cat is here), X cat, say hello (Note details), D, N (there she is again), say hello, promise (she opens a secret door), U, SW (in the corner of the orchard), X fence (here is a jacket), take jacket, X jacket, put jacket in holdall, NE, X statue, take stick from holdall, pull arm with stick (you see a plaque), read plaque (Information), drop stick, D, S, U, E, E, S, X door (green), listen (we here a noise), open door (we are in a bedroom – here is a blue Persian cat), X cat (cries), say hello, E, E, E, X door (yellow), knock (we are asked to enter), X cat, say hello (she goes to her friend), SR room (here is a torch), take torch, W, W, D, E, N, W (In the alcove – here there is an exit to the west when we pull on the arm of the statue), I (important that we have the torch), W (very dark), switch on torch (you may have to try several times – we are at the top of flight of stairs), X steps (slippery), take box from holdall, throw litter (onto steps), D (secret room), take oil can, put can in holdall, listen (we hear a cat), SR crates (we find a grey striped kitten), X kitten (Pickles), say hello, call Sukie (she has her baby again), U, E, drop torch.

E, S, W, U, W, N, open door (once again in the dusty room), W, D, N, U (again in the orchard), E (here are some brambles), X brambles (thorny), LOTH brambles, take scissors from holdall, cut brambles (doesn't work very well, but we try again), take shears from holdall, take can from holdall, take whetstone from holdall, oil whetstone, drop can, sharpen shears, drop whetstone, cut brambles (there is a ladder), drop shears, take gloves from holdall, wear gloves, take ladder, remove gloves, drop gloves, I (hopefully we have the ladder and the holdall), S, LOOV gate (we look over the gate and can see the hotel), climb over gate (not with your hands full), throw holdall over gate, throw ladder over gate, climb over gate, take holdall, take ladder.

S, W (in a paved courtyard with container plants), drop holdall, lean ladder, climb ladder, LOTH window (the cat is still asleep), D, take ladder, extend ladder, lean ladder, take jacket from holdall, wear jacket, climb ladder (we are next to the fireplace), X chimney (smoke is coming out of it), remove jacket, push jacket into chimney, D, wait, take goggles from holdall, wear goggles, take headsquare from holdall, cover nose/mouth with headsquare, take ladder, contract ladder, lean ladder, climb ladder, LOTH window, climb through window, LUND pillow (here is a black key), take black key, unlock wardrobe, LOIN wardrobe (we now have a hessian sack), LOIN sack (contains stolen property), S, drop

time I must end my membership of the SUC. As you can tell by this letter my work requires me to use "Windooofs". This and the fact that my MB-02 will no longer start lead to me purchasing a private Windows computer. Which uses up the little free-time I still have. As I will become a pensioner this year I hope that after I have got rid of the mountain of work I have been putting off, that I will have once again find time to work on the MB-02. To allow this to happen it would extremely nice of you to send me a start diskette with the current version of the programs as a **"Goodbye present for long service membership"** (If you want via cash on delivery). With my best wishes for the SUC and it's continued activities, Bernd Schwarzbach

Hello Bernd, the PC and the Spectrum have by now got used to living with each other in most of our members households. So I hope that after you are pensioned that you will once again find time for the Speccy. I will send you the diskette you have asked for. I'm sorry for the delay I simply had too much to do.

News in Brief

XGAME Station

The XGAME station is a new project for video games, which rather like the Spectrum can be programmed from the lowest level. This should allow the programming techniques of video games to be understood from their most basic components. For hobby programmers and friends of 'Open-Source' this is certainly a super thing and all for around 200 US\$. Here you can see some pictures:

<http://www.xgamestation.com/pr/>

[xgs_micro_web_res_hw_grey_poster.png](http://www.xgamestation.com/pr/xgs_micro_web_res_hw_grey_poster.png)

<http://www.xgamestation.com/pr/>

[xgs_micro_web_res_kickass_poster.png](http://www.xgamestation.com/pr/xgs_micro_web_res_kickass_poster.png)

Source: Alex Varanese, alexv@nurve.net. Nurve Networks LLC, www.xgamestation.com

MB02 – Interesting Downloads

A whole collection of interesting programmes in their latest versions are available on the internet for download at <http://www.mb-maniac.net/index.php>.

Especially interesting is the new version of MB Commanders.

Source: Ingo Truppel

SPRINTER IS DEAD

The Russian firm Peterplus will not be developing the SPRINTER any further. The project has ended. The development team may get together and continue but without PETERPLUS as the distributor an important commercial component is missing and the import of this computer is banned because of the missing CE-Certification.

Source: Yerzmvey



News in Kürze

Seeking a Programmer

For the running project to make a new version of Double Dragon 128 there are still programmers needed. Graphics and Sounds are almost finished. Everyone interested to join the team should contact Dean Swain: dean.swain@btconnect.com
Quelle: Yerzmyey

First Generation

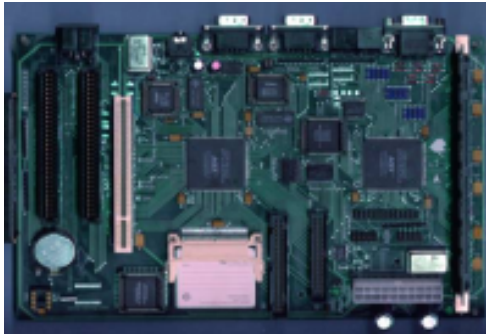
There is a new retro-magazine from Spain. As well as covering the Spectrum it also covers, Atari ST, MSX, Amiga, Amstrad, VCS, Intellivision and others. The team behind the magazine are well known specialists who also produce their own radio show. Those interested should surf on over to: www.matranet.net .
Source: Francesc X. Blasco

Commodore for the Spectrum

The C-One is an ATX motherboard which has been configured as a hardware clone for various 8-bit computers, using reconfigurable hardware (FPGA). Your input takes the form of either, instructions in a hardware description language such as VHDL or the input of a circuit diagram. The result of this input is something called a Core which can be downloaded by users from the C-One web pages – so you are spared the complex reverse-engineering of the old chips (though you can still do it if you want!).

At the moment there are Cores for the Schneider CPC and the C64. And so we have a description of the 6502 and the Z80 chips. The development documentation is available for all, so that other people can also produce new Cores (Ex. for the Sinclair, Atari, KC 8X, MSX). Anyone who is interested in the board should contact Jens Schönfeld of individual computers at the internet address: <http://www.ami.qa>

Further information about the project can be seen at: <http://c64upgra.de/c-one/>
Source: Mike Preuß



Spectrum Music

Now we have an Internet radio station for Spectrum-Music. The address is <http://www.ayland.x.pl/>
Source: Yerzmyey

LCD Lost

Our beloved colleague and founder of SCENE+ Leszek Chmielewski Daniel (LCD for short) has been lost. There are rumours about his whereabouts which we won't comment on here, but we hope that everything will come good and LCD will again be able to support our team.

Source: Florian Stadler

We start outside of the hotel (nothing there), U (the reception), X desk (here there are a number of thins to see, bell, hotel register...), read nameplate, ring bell (the receptionist appears), say hello, X pen, X register, sign register (we are given a red key), U, E, N (a corridor), N (two Burmese cats block our way), listen, say hello (you must note the details), N, W, W, W, X door (red),unlock door (we enter the room and slide down to the laundry room), SR basket (here you find a white key), E, S, E, S,W (an alcove), SR alcove (we find a holdall), take holdall, X holdall, E, E (the childs room), X nurse, say hello, x chairs (here is a hair pin), take pin, put pin in holdall, N (dining room), listen (once again note the details), x tablets (here is a roll with bread), take roll, put roll in holdall, W, N (the hotel kitchen), X chef, say hello, X walls (here you find a grey key), take grey key (the hotel chef protests), E (the chef won't let us into his store room), X worktop (here you find a large knife and string), take string (you need something to cut it), S, S, S, E (the lounge of the hotel), X chairs (we notice the upholstery), LUND cushions (we look under the cushions and now have a darning needle), X needle, put needle in holdall, E (ah – the bar), X bar, LOBE bar (we look behind the bar and find some scissors), take scissors, put scissors in holdall, W, W, W, NW, LOBE door (here is an overall), X overall (has pockets), SR pockets (we now have some pliers), put pliers in holdall, SE, U, E, N, N.

E (by a window), X seat, LOBE cushions (we find a newspaper), X newspaper, read newspaper (we find a hint here), put newspaper in holdall, climb through window, S, W (a bedroom), X cat, say hello (she is too busy looking at herself to take any notice of us), SR clothes, take headsqre, put headsquare in holdall, W (through a door), N, X door (white), unlock door (in another bedroom), SR bedroom (we find some swimming goggles), take goggles, put goggles in holdall, E (bathroom), SR linen basket (we find a wash mitten), drop mittens (we don't need it), W, S, W.

X door (brown), LOTH Keyhole (we try to look through the keyhole, but the key is in the lock on the other side of the door), take newspaper from holdall, take needle from holdall, slide newspaper under door, insert needle into keyhole (we push the key out of the lock and it falls onto the newspaper), pull newspaper (now we have it including the brown key), put newspaper in holdall, drop needle, unlock door (in a warm room), X bed (here there is a sleeping cat), LUND bed (her is a suitcase), X suitcase, open suitcase, LOIN suitcase (we look in the suitcase and find some bolt cutters), take boltcutters, put boltcutters in holdall, X wardrobe, open wardrobe (locked – we'll deal with it later), S, E, S, S, W, D, E, N, N.

N (the kitchen), take scissors from holdall, cut string, put scissors in holdall, N, W, LOBE pots (here are the gardening gloves), take gloves, put gloves in holdall, W (in front of a garden shed), X shed, take boltcutters from holdall, cut chain, drop boltcutters, open door, X bench (here a large amount of old junk), SR junk (we find a pair of shears), X shears (need to be sharpened), put shears in holdall, E, E, N (by a pond), LOIN pond (here are goldfish – don't need them), E (by a gate), climb over gate (can't do it, at least not from this side), E (the herb garden of the manager), SR herbs (we find a trowel), take trowel, N (the vegetable patch), dig (only if we have the trowel – we find a whetstone), drop trowel, put whetstone in holdall, S, W, W, W, W (to the side of the shed), LOBE shed (we find a cardboard box), take box, X box (contains cat litter), put box in holdall, N.

N (here is a cat trying to catch fish), X cat, say hello (she runs away), NE (we see the

- | | |
|--|--|
| 16. In the creche / nurse, chair, nappy pin | 38. Standing on a beautiful green lawn |
| 17. In a large dining room / tablettes, bread roll | 39. By the side of a garden shed / cardboard box |
| 18. In the hotel kitchen / hotel chef, grey key, ball of string | 40. Walking along a path beside a river |
| 19. At one end of the reception hall | 41. Ahead the river path veers north-east / cat, eight trout, string bag |
| 20. In the lounge with many chintz covered chairs / chairs, cushions, knitting needle | 42. Just ahead the path ends at a high fence / shrub, long stem |
| 21. At the east side of the lounge by a small bar / pair of scissors | 43. The chef's pantry / shelves, walking stick |
| 22. In the toilets with the usual cubicles and washbasins / overall, pair of pliers | 44. On the east side of the paved patio |
| 23. Standing by an open window / seat, cushions, newspaper | 45. Here the corridor bends |
| 24. Standing outside an open window at the north end of the balcony | 46. By a door |
| 25. In the centre of a balcony near some open French windows | 47. In a very dusty bedroom / two candlesticks |
| 26. In a pretty but rather untidy bedroom / cat, clothes, silk headsquare | 48. At the top of a flight of steps / grey tabby = sukie |
| 27. In a double bedroom, rather larger than the others / pair of swimming goggles | 49. At the bottom of some steps in a brightly lit passage |
| 28. In a rather nice bathroom / linen basket, pair of mittens | 50. At the end of a long passage A / sukie |
| 29. In a warm room / bed, suitcase, pair of boltcutters, wardrobe, small black key, small hessian sack | 51. Standing in a small clearing amongst the trees / large statue |
| 30. On the patio outside the kitchen door | 52. In the south-west corner of the orchard / old jacket |
| 31. On a paved patio / pots, pair of gardening gloves | 53. This bedroom is in some disarray / blue Persian cat |
| 32. On the west side of the patio by a small shed | 54. In an occupant room / Siamese cat, torch |
| 33. Inside a small garden shed / bench, junk, garden shears | 55. Standing at the top of some stone steps |
| 34. In the middle of the lawn / small pond, some goldfish | 56. In a secret room / oil can, crates, tabby kitten |
| 35. At the lawn by a high fence with a gate | 57. In a corner of an orchard overgrown with brambles / ladder |
| 36. At the chef's herb potch near the vegetable garden / garden trowel | 58. At the south-east corner of the orchard |
| 37. In the well-tended vegetable garden / whetstone | 59. On the top of a ladder, outside a window |
| | 60. On the top of a extended ladder by a chimney |
| | 61. In the hotel office / key-board, blue key |
| | 62. In our room / armchair |

So that was all of the locations and a large number of objects to experiment with. So wasting no more time lets look at a step by step solution for the adventure:



Hello Spectrum Friends!!

Today we want to look at a long discussed subject, the freely locatable machine code program. Long discussed while there are a large number of things which need to be taken care of. As you probably know there are programs to make machine code programs compatible with a new location in memory but it's probably better to take care of these things when writing the program, so that it is freely loadable to any location. In general a long Z80 machine code program uses absolute addresses and has to be loaded to a fixed place in memory. These absolute addresses appear most often in load and jump instructions but also in subroutines. The aim is to ban these absolute addresses from our program. This is fairly simple with load instructions as those instruction which refer to areas of memory outside of the program don't need to be changed. We only have to take care of those which address data inside the various areas of program code. To do this we make use of the fact that the USR-Function which starts a machine code program has it's start address in the BC register pair.

So right at the start of our program we save the contents of these registers in a safe place. For example this could be a BASIC system variable which we know won't be changed during the running of the program. Now to access data within the program we have to do the following: The address is calculated from the sum of the start address which we saved and the relevant address within the program where the data is to be found (this is the distance from the start address). As long as the data area is small then it may be enough just to bring the start address of the data area into the X register (using the program start address in BC and the program relative address of the data). So now any critical load instructions will be indexed by the X register. If X is set to the middle of the data area then we can access 256 bytes (IX-128 to IX+127), without having to change the X register. This is hopeless when there is a JP instruction, which has to jump a considerable distance and we want to replace it with a relative jump. To do this would need a number of JP instructions and make the program difficult to read and a CALL instruction cannot be represented in this way at all. Here there are two suggestions on how to solve the problem which we want to look at, each with it's advantages and disadvantages. The assembler program printed at the end of this article show both methods. The first method is very short but has nasty subroutine calls. The program writes at the beginning a small utility routine in the area MEMBOT. Of course you could use any other memory area, as long as the address for the program never changes. Every subroutine call and every jump to a fixed address is carried out via this routine in that the address we want to CALL or JUMP to is first loaded into the HL register pair and then a CALL MEMBOT or JP MEMBOT instruction is executed. The routine is then responsible for calculating the address we want to reach and jumping to it. Anyone who is familiar with machine code will notice that this method uses very few instructions and therefore is very quick. But it does have a disadvantage, because it uses a register pair this pair is no longer available for the program to transfer parameters. Also each jump needs 6 bytes which means this method is only really useful for programs with relatively few JP or CALL instructions.

The next method only needs 2 bytes for each CALL instruction but is slower. Each CALL in the program is replaced by a RST \$10 instruction, followed by a byte. This byte

contains the number of the subroutine we want to call. In the order of their appearance in the program the start addresses of these routines is entered into the list UPTABL. As you know the Spectrum operating system normally uses the RST \$10 instruction to output characters to a stream and the system variable CURCHL contains the address of the channel description which is connected to the currently opened stream. The address of the output routine for this stream is in the first 2 bytes and that is where the RST \$10 instruction will jump to. In our program we modify the pointer CURCHL so that it points to our own UPCALL routine. UPCALL first corrects the register and stack situation which has been changed because of the ROM routine which has just run. The output routine works with the second register set and HL' has been placed on the stack. UPCALL then reads the number of the required subroutine and gets the relevant start address and finally jumps to the start of this routine. With this, any CALL will automatically be directed to the correct address but not a JP. Of course it would be possible to modify UPCALL so that for example 0 to 19 are for JP instructions and the others for CALLs. Or you could delete the un-needed return address from the stack.

The following assembler listing shows a number of example –UP's to demonstrate what has just been described. The programs were developed by Michael Schramm.

A comment to finish: The following listings were scanned from original listings. So in spite of the fact that they have been carefully checked, a transfer failure cannot be discounted. If any have occurred then I would ask for information in the club magazine or directly to us.

Enough for today. See you soon, here is the Info!!

(c) 2004 Harald R. Lack, Möslstraße 15 a, 83024 Rosenheim,
Hubert Kracher, Schulweg 6, 83064 Raubling

Listing 1

```
; Freely locatable program
; simple, fast version
; calling subroutines uses a lot of memory
;
MEMBOT = 23698
OPEN = $1601
;
```

TIPS & TRICKS

ADVENTURE SOLUTION "FELINE SLEEPY"

Hello Club members!

As part of our adventure solutions here in the club we are looking today at the program „Feline Sleepy“ from the pen of Edwina Brown. As far as we know there were versions for the Spectrum 48K and the Amstrad 6128. But of course we want to look at the Spectrum version, whether the Amstrad version is identical we cannot say. So we don't want to waste time looking at the various versions but get straight down to the game. But first a couple of comments about the controls for the program. As we expect from Edwina Brown programs the parser uses a few short commands. Instead of examine you can use a simple X (examine itself doesn't work). Also there are things like SR (search), Lund (look under), Lobe (look behind), Loth (look through), Loin (look in), loov (look over) just to mention the most important. Of course what's really important at the start of an adventure is to know what the objective is. So here a short resume of the content of the program which you can also see in the program.

The player is someone called Jenny. We are on a holiday trip through England when suddenly on a quiet country road a deer springs across the road directly in front of us. On a country road this is nothing very unusual, so we don't think much about it. However it does shake us up a bit and so we stop in a nearby parking area to let our nerves recover. As we have had a bit of shock we fall asleep and wake up an hour later. As we can't stay here we decide to find the next hotel. A short time later we see a sign with the words "CHIMP HOTEL" on it. Driving through the entrance we see some magnificent steps. As we get out of the car a porter comes to meet us in a full size cat costume. She asks if she can park our car for us and completely without thought we hand over the key to our car and she drives away with it. At least by this time we should be wondering..... But we don't have the time as here begins the adventure.

And now we come to the plan showing all 62 locations of the adventure and herewith we can see that it is one of the more complex adventures. Here are a description of the locations and the objects to be found there:

- | | |
|--|--|
| 1. Outside a hotel at the bottom of some steps leading up to an imposing door | 9. At the end of the corridor by a window and a door to the north |
| 2. By the reception desk / bell, nameplate, receptionist, pen, register, red key | 10. In the laundry room / large linen basket, white key |
| 3. On the landing at the top of a flight of stairs | 11. At the end of the corridor with two open doors |
| 4. Another of the hotel's numerous corridors | 12. Here the corridor bends leading towards the back door |
| 5. Another corridor / two Burmese cats | 13. Here the corridor turns, going west and south with open doors on two sides |
| 6. Standing by a door where the corridor turns | 14. In a north-south corridor by an alcove and an open door |
| 7. By a door in another corridor / brown key | 15. In an alcove under the stairs / holdall |
| 8. Further along the corridor by a door | |

Stars on the Internet

Hello Internet-Surfer

First I would like to appeal to all those who think they are well informed about the Spectrum, have you been tested and certified? No, Then do it now under:

<http://www.worldofspectrum.org/zxcertification.html>

Will a reader manage to beat my 77.5%? Not to mention that in the area Hardware I managed to score 100%, I was worst in the area on emulators.... but who is interested in that, when you have a real Spectrum.

We want to provide some space to our friends with the ZX81. Under <http://www.zx-team.de/andre/> Here you will find the programs and projects of a Canadian user listed and available to download. Including 5 issues of his Canadian ZX81 magazine which has been produced on a ZX81. Impressive!



How would the current PC-hits look if they could always be converted for the Spectrum. Have a look at: <http://www.aardvarken.net/zx/index.htm> Impressive results can be seen again and again for Russian games, but an unknown Spectrum fan (at least by me) has produced very realistic screens from some of these games. Madness, a real super graphic result, a magician on the Spectrum. When you see the pictures you are in heaven. Definitely have a look and then press 1 to 4 to see further galleries.

A small update from Chrisph Odenthal. He has expanded his pages on www.speccy.de with a number of things, such as photo's from the previous Spectrum-Meeting. Simply surf on by.

```

ORG 30000                                ;Any Start address
START  LD HL, MEMBOT                       ;In the area MEMBOT
      LD (HL), $C5                          ;creates the following
      INC HL                                 ;Machine code
      LD (HL), $01                          ;BC holds the
      INC HL                                 ;Address START (this comes with
the USR                                     ;Mechanism)
      LD (HL), C
      INC HL
      LD (HL), B
      INC HL
      LD (HL), $09
      INC HL
      LD (HL), $C1
      INC HL
      LD (HL), $E9
;
TEST   LD HL, UP1-START                    ;Call of a subroutine
      CALL MEMBOT                          ;with a relative address
      LD HL, ENDE-START                     ;and the resulting jump
;
Up1    JP MEMBOT
      LD A, 2                               ;Open Stream 2
;
      CALL OPEN                             ;(Output to screen)
      LD A, " A"
      RST $10                               ;and print a couple of characters
      LD A, "B"                             ;to prove that this routine
      RST $10                               ;works.
      LD A, $0D
      RST $10
      RET
ENDE   LD A, "X"                           ;once again output some characters
      RST $10
      LD A, "Y"
      RST $10
      LD A, $0D
      RST $10
      RET
      END

```

Listing 2

```

;The following routine is placed in the MEMBOT area
;
;PUSH BC                                ;Save the BC-Contents
;LD BC, START                            ;Calculate the absolute start
address

```

```

;ADD HL,BC                ;with the help of the poked start
;POP BC                  ;address.
;JP (HL)                 ;jump to this address

;More complex version with the very short
;Call mechanism (2 Bytes for each call)

ERRSP = 23613
CURCHL = 23633
BREG = 23655
HELPCH = 23728
;
ORG 40000                 ;Any address
;
START    LD HL,OFFSET+1-START
        ADD HL,BC          ;Write the address difference
        LD (HL),C          ;into the routine UPCALL.
        INC HL             ;
        LD (HL),B          ;
        LD HL,UPCALL-START
        ADD HL,BC          ;Adr. UPCALL in
        LD (HELPCH),HL    ;HELPCH.
        LD HL,HELPCH
        LD (CURCHL),HL
        LD HL,UPTABL-START
        ADD HL,BC
        EX DE, HL
        LD HL,TABADR+1-START

        ADD HL,BC          ;Calculate address UPTABL
        LD (HL),E          ;and
        INC HL             ;write it into the subroutine
        LD (HL),D          ;UPCALL
        RST $10            ;Call
        DEFB 1             ;BEEP-UP.
;
;
        RST $10            ;PRINT-UP.
        DEFB 0
        DEFT „Test-Text“
        DEFB 13           ;CR
        DEFB 255          ;End mark.
        RST $10            ;Another BEEP.
        DEFB 1
        LD SP,(ERRSP)     ;Clear Stack and
        JP $1B76          ;Jump in den BASIC-Interpreter

```

```
UPTABL    DEFW PRNTST-START ;UP 0
```

Finally we should mention that PAGERWORD used together with TASWORD is a very powerful combination. Negative is that you must already own Tasword to be able to use PAGERWORD. But as TASWORD is wide spread this shouldn't be a real problem.

So that's it from our side on this subject. Maybe one or more of you has the program lying around and has been a bit hesitant about trying it. We would be pleased to see a report in the club magazine from anyone who has given it a try.

See you soon, back here in SUC Session.....

(c)2004 Harald R. Lack, Möslstraße 15 a, 83024 Rosenheim und
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EVENT CALENDAR

23.-24.04.2005

4th International Spectrum- and SAM meeting in Stein near Urmond/Holland <http://sinclair-gg.hobby.nl/>

07.07.-17.07.2005

SHUCON: Grill, Spectrum and more. Enormous party in Shumice/Czech Republic. More information at

The e-mail address: palenicek@cybernet.cz

27.-28.08.2005

SPECTRUMANI in Wittenberg, 2 day meeting of Spectrum fans. More information in good time for the event in the next issue of the magazine.

01.10.2005

3rd combined meeting of the Joyce-User-AG and the Spectrum-Profi-Clubs in Ittenbach near Königswinter, Ölberingweg 45.

ROUTINES allows you to load a new code section, for example new codes for Pageword. To do this you need the name and start address for the routine. The function INSERT A BLOCK makes it possible to reload a previously saved text section to it's previous place. For example: We want to reinsert the first 5 lines into the text again. To make space these lines will be moved and the ECHANGE function reloads the original lines to this position. EXCHANGE differs from MERGE as MERGE only adds text to the end. Anyone who has created a long text may want to include a Header and a Footer for each page. The header is saved with STORE HEADER and the footer with STORE FOOTER. They will be included later. If you use the function STORE HEADER then the text will be included in the top line and saved for the page separation in Pageword. The function PRINT TEXT allows printing to a 'Real' printer. Additionally to the functions known from Tasword here you have the possibility to print multiple copies. With SAVE Text it's possible to save just selected lines of the text (for example lines 4 to 53). If the output device is the Microdrive then you will be asked for the drive number. You can also select whether a file with the same name should first be deleted. By LOAD TEXT you will also be asked for the drive number. Any previous text in the memory will be deleted when a new text is loaded. With INSERT A BLOCK a particular number of empty lines will be inserted into the text. Everything from this position will be moved down. With PAGE TEXT you can define the paging of the text. You have a total of 300 line available for use. If you use this function you will be asked for the page number and following this the saved header and footer will be added to the text. Including this each page is exactly 60 lines, divided as follows, 2 header lines, 1 empty line, 53 text lines, 2 empty lines and 2 footer lines. To number each page there is the function WRITE PAGE TOTAL. This function asks for the first page number and the total number of pages. After this the pages will be correctly numbered. If the order of the pages is later changed then the this function can be removed with UNPAGE TEXT. With that it's possible to delete whole blocks or to insert new ones. The function WORD COUNT counts the number of words in all of the existing text. To change the medium used for saving you should use the function RUN 15. As mentioned before by a warm start the program then jumps to the text editing page and you can continue to enter text. Of course it's possible you will call up the wrong function, this can be corrected with QUIT CHOICE.

The program Pageform is used to configure the machine code section Pagecode for each user. It has 4 menu options. Option 1 (PAGE LAYOUT) this controls the page layout that is Header (0-4), Footer (0-4) and empty lines between header or before footer in the text (0-4) and the number of text lines (0-254). When you start using Pageword then these parameters are fixed. Option 2 (OPEN OUT/CLOSE UP LINES) selects the number of empty lines which will be inserted. Option 3 (ALTERNATE CONTROL CODES) offers the direct entry of the codes to be exchanged. The program normally takes over the standard Tasword codes. So here you can select a second set of codes. Here you define many different Pagecodes, as you need them. When you use the function EXCHANGE they will become selected. To save the changed Pagecodes we have Option 4 (SAVE MODIFIED PAGECODES). Using the 3 text files mentioned above the user can see the new functions directly on the screen. It all works in a similar way to Tasword Tutor. Where examples with practical exercises is used. So that getting familiar with Pageword can be done quickly.

```
DEFW BEEP-START ;UP 1
DEFW PRINT2-START ;UP 2
DEFW PRINT3-START ;UP 3
```

UPCALL

```
LD (BREG),A ;Note accumulator.
POP HL ;Clear return address.
POP HL ;Alter value for HL'
EXX ;back to 1. Regset
EX (SP),HL ;UP-Nummner-Byte
LD A, (HL) ;in den Accumulator.
INC HL ;Increase return address.
EX(SP),HL ;
PUSH HL ;Save HL.
LD H,0 ;Double Accumulator contents
SLA A ;and place in HL
RL H ;then recreate
LD L,A ;A.
LD A, (BREG) ;
PUSH DE ;Calculate real Address
TABADR LD DE,0 ;in UPTABL,
ADD HL, DE ;Read table entry
LD E, (HL) ;and
INC HL ;
LD D, (HL) ;include offset
OFFSET LD HL,0
ADD HL,DE ;Restore old register
POP DE ;contents
EX (SP),HL ;and jump to the
RET ;required subroutine.
```

;

PRNTST

```
EX (SP),HL ;This subroutine
LD A, (HL) ;prints the
INC HL ;Text, contained
EX (SP),HL ;in the
CP 255 ;subroutine.
RET Z ;
RST $10 ;255-Byte is
DEFB 2 ;End marker.
JR PRNTST
```

;

BEEP

```
PUSH AF
PUSH BC ;Call the
PUSH DE ;BEEP-Routine
PUSH HL ;in the ROM.
LD DE,100 ;DE controls the
LD HL,200 ;length of the note,
CALL $03B5 ;HL the
POP HL ;audio frequency.
```

```

POP DE
POP BC
POP AF
RET
;
PRINT2  PUSH AF          ;PRINT CHR$ accumulator;
        LD A,2
        JR OFEN
;
PRINT3  PUSH AF          ;LPRINT CHR$ accumulator;
        LD A,3
OPEN  EX (SP),HL
        PUSH HL
        LD HL, CURCHL)
        PUSH HL
        PUSH DE
        PUSH BC
        CALL $1601          ;OPEN-Routine
        POP BC              ;In ROM,
        POP DE              ;sets CURCHL.
        POP HL
        POP AF
        RST $10             ;Output character
        LD (CURCHL),HL     ;recreate the old value of
        POP HL              ;CURCHL
        RET                 ;for the
                                ;Subroutine-
END                                ;mechanism

```

PAGEWORD

Dear fellow users!!

One of the most often used applications on the Spectrum is without doubt word processing. For this function there are a whole range of good programs available. Certainly not the least is DTP with it's own programs, Wordmaster, Typeliner and Headliner making desk top publishing possible on a small computer like the Spectrum. Just what is possible with this package of programs you have learned in the past through really super articles by Walter Sperl and Günther Marten. So we don't want to repeat that again. But long before DTP existed there was Tasword which was the non plus ultra in word processing for our computer. Tasword always was a good program, it was just missing a few features which were made available in Wordmaster. For this reason the Tasword extension PAGEWORD from Reform Software was made available many years ago. As it's an extension for Tasword you should first be familiar with Tasword itself before using it. But as Tasword has such a wide following I think we can accept that most of us know Tasword pretty well. To work with Pageword you need the code part of Tasword. Unfortunately Pageword is only available with English instructions (*sounds good to me – lan*) but this shouldn't be too much of a problem for computer

freaks. The program itself consists of a control program written in BASIC and a short machine code section. The BASIC program replaces the standard Tasword one and the machine code portion contains the extra functions from PAGEWORD. Also included in the package is the program Pagecode to configure everything as the user wants it. Then there are three text files with help information for the user. This could be compared to the tutor from Tasword. So as soon as the three program sections have been combined, that is Pageword, Pagecode and the Tasword-Code then we can begin to work with the functions.

Immediately after loading the function RUN 15 is called. Here the question is asked 'which input medium' (Cassette or Microdrive) and the question is repeated for the 'output medium'. Through this you have the advantage of reading from cassette and then being able to write to Microdrive or Diskette. Then the program jumps to the Start procedure. If it's a cold start both of the missing code sections are loaded, with a warm start we immediately land on the text entry page. As for the printer codes which have been defined for Tasword they have to be transferred to the new machine code section with a direct command. This is also necessary for any replacement of the control codes. The initial configuration is for the EPSON FX 80 printer. If this is to be changed then the correct codes must be poked into the memory locations. When all that's behind us we can begin with the text entry. This may all sound a little complicated and complex but really it's not.

When writing text all of the standard Tasword commands and functions are available. When editing there are though some changes. Either we do the editing inside the text field or via the menu (Stop-Key). The menu which appears contains 6 old and 16 new functions. The 6 original functions are:

- RETURN – Return to the text view
- LOAD, SAVE, MERGE – external device commands
- BASIC – Return to the BASIC editor
- PRINT – Output of the file to the printer

And now to the new commands and functions:

Just as with Tasword here the graphic characters are included in the text to provide printer control. Though with the function ALTERNATE CONTROL CODES an exchange of the control characters is possible. You have the possibility here to use 32 control codes rather than the 16 of Tasword. These new control codes each of which is 4 bytes long cannot be mixed with the standard control codes in the same line of text. The function NORMAL CONTROL CODES will once again reactivate the standard control codes. As mentioned above the program Pageform allows a changed version of the control-codes to be defined and saved. These can then be loaded by Pageword with the function EXCHANGE. The function OPEN OUT LINES allows a previously in Pagecode defined line spacing to be changed (1 to 4 lines). Anyone who wants to print the text later in two columns can see it before on the screen. Though it should be mentioned that a text which through this parameter exceeds 300 lines will be lost. To return to the previous format there is the function CLOSE UP LINES. As the opposite to OPEN ALL LINES it deletes all of the extra blank lines. To delete a text block there is the function DELETE A BLOCK. You will be asked for the start and end line. The function EXCHANGE